Fingerprint Identification Access Controller

SB2000A User's Manual

(Rev1.1)

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Contents

1   Technical Specification

Item		Value
CPU		ARM7 Core Samsung S3C44B0X 66MHz
Match speed		≤1Sec (In case of 500fp enrollment)
FAR		0.00001%
FRR		0.1%
Fingerprints Capacity		500
Maximum of Manager		10
Maximum of ALog		20,000
Maximum of MLog		1,000
The number of times to enroll		3 times
Enrollment speed		3 sec/person
Enrollment mode		Fingerprint, Password, Card, Fingerprint + Password, Fingerprint + Card
The range of Enroll ID		1~99999999
Display language		Korean, Chinese(Simplified), Chinese(Traditional), English, Japanese
Sensor	Type	Optical sensor
	Resolution	403 dpi
	Image grasping area	15mm(W) × 15mm(H)
Port		RS485 (9600~115200bps)
Accuracy of RTC		±1Min/Month
I/O Port		wiegang26 Input port, wiegand26 Output port, Lock control Output port
Display mode		128*64 LCD
Working voltage		12V ± 5%
Working Current		Max. 500mA
Power consumption		< 5w
Working environment	Temperature	0℃ ~ 45℃
	Humidity	20%~80%
Dimensions		80mm(W) × 170mm(L) × 40mm(H)

1)I/O Port

12V Input
GND
LOCK0
LOCK1
DATA1
DATA0
RS485-
RS485+

8PIN 4mm
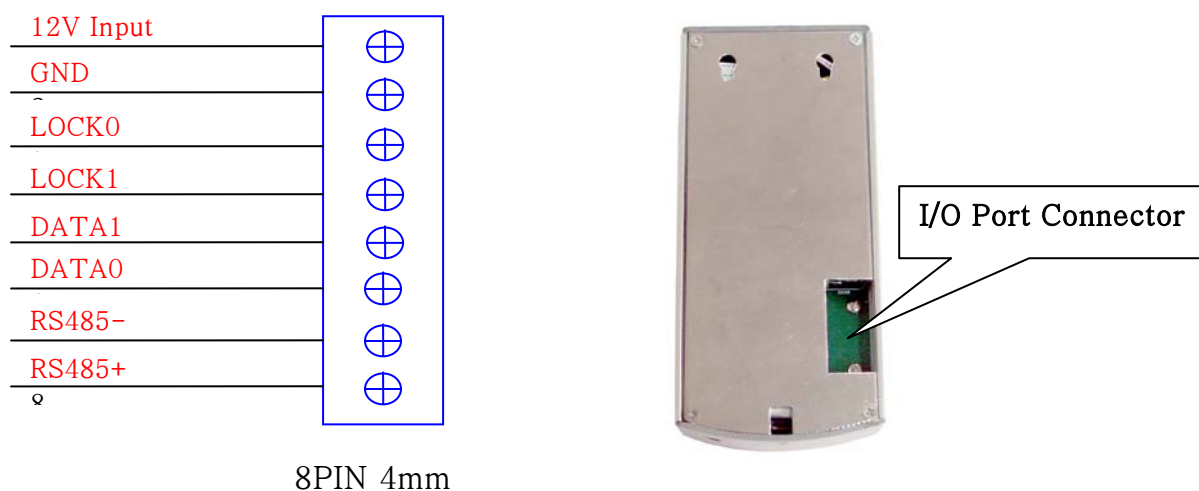
SB2000A has the I/O port connector with 8 pins (4mm interval).

User can control the opening and closing of the gate through this connector.

Every port signal is the following.

No	Signal Defination	Description
1	+12V	The power connector
2	Earthing	The earthing connector
3	LOCK1	Lock output port 1
4	LOCK0	Lock output port 2
5	DATA1	DATA1 of WIEGAND26
6	DATA0	DATA0 of WIEGAND26
7	RS485-	Negative terminal of RS485
8	RS485+	Positive terminal of RS485

※If user control the gate through the LOCK port, power supply(12V) guarantees not only the Access controller, but also the lock operation, so the working current must be guaranteed as following.

Execution current ≧ Access controller **working current** + Lock working current

2)Lock output form

Output state: There are the opening state and the closing state.

LOCK0 and LOCK1 are used for output port.

The states of the output port in the opening state and the closing state are the following.
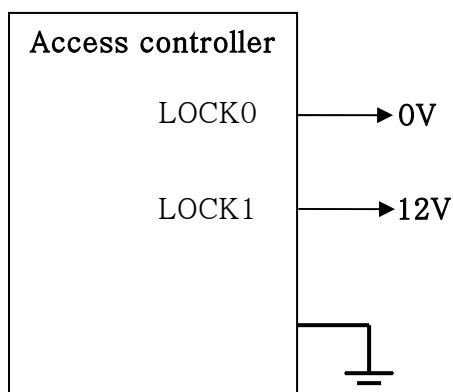
Output in the closing state   Output in the opening state
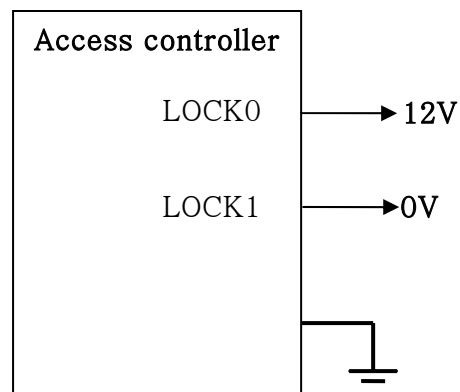
3) WIEGAND Output form

After a user authentication, the responding ID can be transmitted to the Wiegand controller in the form of Wiegand26.

- Data form of Wiegand26

The output pulse is the following.
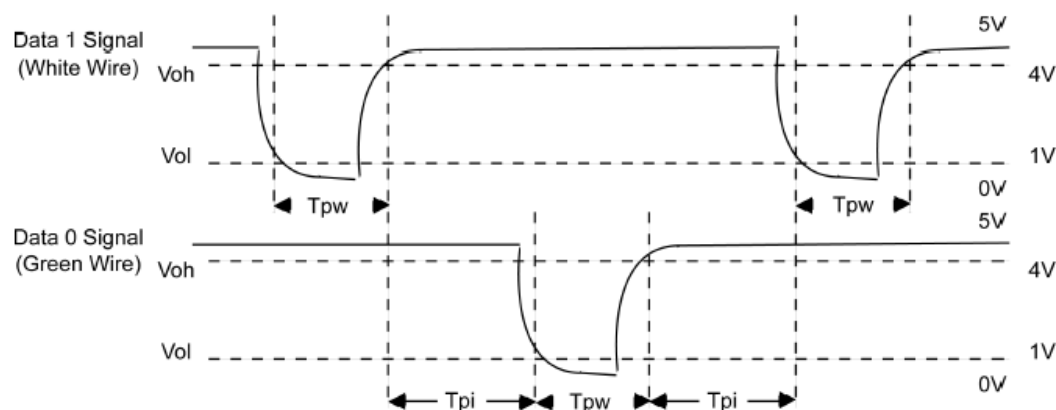
Symbol	Description	Time length
Tpw	Pulse Width Time	$100\mu s$
Tpi	Pulse Interval Time	1ms

The data is 26 bytes and its form is the following.

1   2   9   10   25   26

EP	FC	CC	OP
1bit	8bit	16bit	1bit

Field	Description
EP	Even parity bit
FC	Machine ID of the Access controller(1~255)
CC	Authenticated user's ID
OP	Odd parity bit

- Even parity bit and Odd parity bit

The EP value is compute with bits 2 to 13.

If the number of 1's is even EP is 0, else it is 1.

The OP value is computed with bits 14 to 25.

If the number of 1's is even OP is 1, else it is 0.

2   Basic concept of SB2000A

SB2000A

1)   User and Manager

The users of SB2000A can be divided into "manager" and "common user" (is simply called "user").

"User" can only verify for In/Out, but can't management operation.

Manager can not only verify for In/Out, but have also authority of management operation.

In other words, Manager can enroll and delete users (including manager), in spect and delete data of enrollment, In\Out
log and management log, configure the system information.

2)   Working mode

SB2000A works in the three statuses: verification, management, communication.

In the verification mode, the machine verify a user by his (her) fingerprint or password and save the log.

In this case, if the user was verified successfully, his (her) ID is displayed on the LCD screen.

In the management mode, enrollment and deletion of the users, finding and deletion the log or user's data, setting the system information can be performed.

The management operation can be performed only by manager.

If 30 seconds pass while there is no any operation in the management mode, it goes back to the verification mode automatically.

While the state switches over to the management mode, the manager must verify by fingerprint or password.

If no manager is enrolled in the access controller machine, everyone can do management operations without verifying the manager's identity.

3) Enrollment and identification

Enrollment and identification of users are two most important functions of the access controller machine.

SB2000A has 5 kinds of enroll mode: fingerprint, password, card, fingerprint and password, fingerprint and card.

Each mode has its own proper feature and users can select suitable mode.

When user starts to enroll, an enroll ID which is used in identification is allotted to him.

Enrollment ID is an integer from 1 to 99999999.

Fingerprint can be enrolled 3 per an enrollment ID at most and password can be enrolled only 1 per ID.

After the first fingerprint has been enrolled, next enrollment on the same ID is called "surplus enrollment".

When 3fingerprint and 1passowrd is enrolled on an ID, order of enrollment has no relation.

When 1st fingerprint or 2nd fingerprint is enrolled and password isn't enrolled on the same ID, fingerprint and password can be enrolled at the same time.

For password enrollment, arbitrary integer from 1 to 9999 can be selected as password.

4) Log Data

In SB2000A, all information concerning with operations in identification mode and management mode are saved in its memory.

These saved data are called "log data".

There are two kinds of log data that is ALog and MLog.

ALog refers to log data concerned with verification result under In/Out mode and MLog refers to management operations under management mode.

Log data are conveyed to PC management software through communication port, and saved into database for searching and statistics.

5) Function setting

In the access controller machine, a manager can make his own system setting or changing of various setting value according to his requirement.

Those functions are machine ID, display language, auto off time, system time, ALog and MLog warning values, Unlocking time and so on.

Machine ID is a unique number for distinction in network.

In the SB2000A, Korean, English, Chinese (simplified), Chinese (Traditional) can be used as display language.

Once auto off time is set, it will be auto off after a certain period without any operations.

The unit of auto off time is min.

ALog and MLog warning values are set to notice that ALog or MLog count has already reached to a certain limit.

Unlocking time is the time when the door is opened.

A user can't verify in the period of this time after verification.

In this case ALog data won't be saved repeatedly.

Manager can change Unlocking time according to his (her) requirement.

3   How to use SB2000A

1) Keyboard

Structure of the keyboard is shown below.

1	2	3	E
4	5	6	M
7	8	9	↑
⊙	0	OK	↓

Functions of keyboard are as follows:

- E(ESC)   To cancel or to move into higher grade menu
- M(MENU)   To enter into menu or play a role of backspace when digit inputting
- OK   To confirm the current setting
- ⊙   Power on or off
- ↑   To move into former command or increase as 1 when digit inputting
- ↓   To move into next command or decrease as 1 when digit inputting
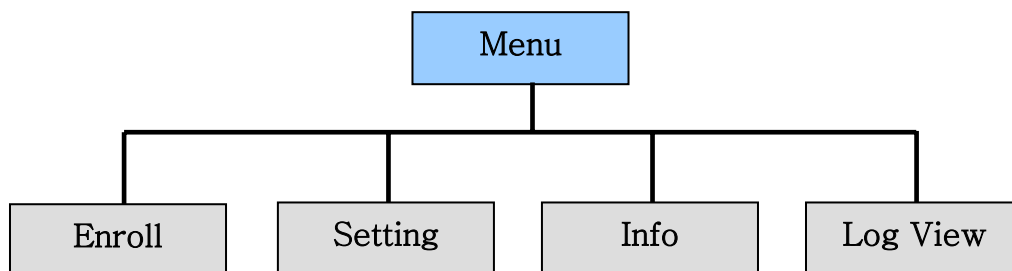- 0 … 9   To input digit in menu mode

2) Menu

It is convenient to operate the fingerprint SB2000A.

Using 5 function keys and number keys manager can select menu commands and set or change various kinds of functions.

And message in LCD and beep sound will inform whether the operation is correct or not.
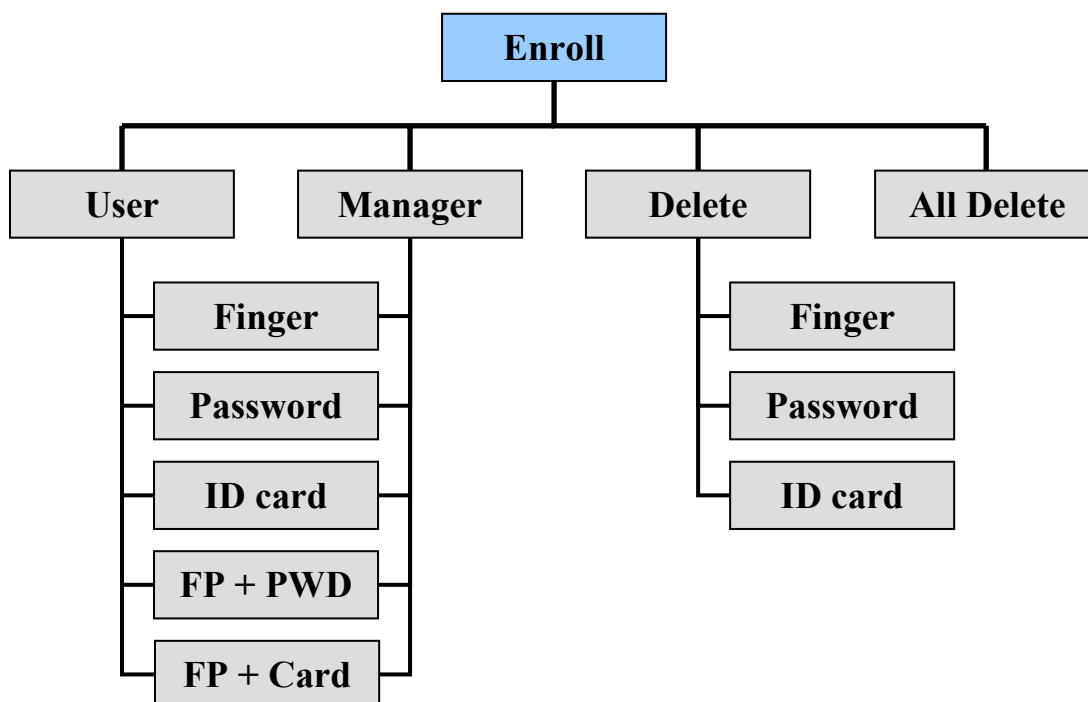
①   **Main menu**

Press Menu in the keyboard, then you can see 4 main menu commands.

```
                    ┌───────────────┐
                    │     Menu      │
                    └───────┬───────┘
        ┌───────────┬───────┴───────┬───────────┐
    ┌───────┐   ┌───────┐       ┌───────┐   ┌───────────┐
    │ Enroll│   │Setting│       │ Info  │   │ Log View  │
    └───────┘   └───────┘       └───────┘   └───────────┘
```

② Enroll

　　If select the "Menu" item and press "OK" key, the follow items is displayed on the LDC screen.

```
                    ┌───────────────┐
                    │    Enroll     │
                    └───────┬───────┘
        ┌───────────┬───────┴───────┬──────────────┐
    ┌───────┐   ┌─────────┐     ┌────────┐   ┌───────────┐
    │ User  │   │ Manager │     │ Delete │   │All Delete │
    └───┬───┘   └─────────┘     └───┬────┘   └───────────┘
        │                          │
    ┌─────────┐              ┌─────────┐
    │ Finger  │              │ Finger  │
    └─────────┘              └─────────┘
    ┌─────────┐              ┌─────────┐
    │Password │              │Password │
    └─────────┘              └─────────┘
    ┌─────────┐              ┌─────────┐
    │ ID card │              │ ID card │
    └─────────┘              └─────────┘
    ┌─────────┐
    │ FP + PWD│
    └─────────┘
    ┌─────────┐
    │ FP + Card│
    └─────────┘
```

③ System setting

　　"System Set" menu item has the following items.

```
  ┌───────────┐                          ┌───────────┐
  │  Machine  │                          │ Language  │
  └───────────┘                          └───────────┘
  ┌───────────┐                          ┌───────────┐
  │ NumOfMng  │                          │ Auto Off  │
  └───────────┘      ┌──────────┐        └───────────┘
  ┌───────────┐      │  System  │        ┌───────────┐
  │ Time Set  │      └──────────┘        │ MLog WRN  │
  └───────────┘                          └───────────┘
  ┌───────────┐                          ┌───────────┐
  │ ALog WRN  │                          │  Unlock   │
  └───────────┘                          └───────────┘
```
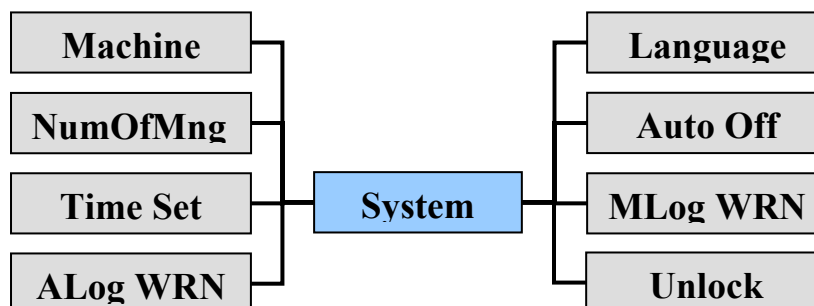
④   Info

In "Info" menu, the current number of enrolled users and managers, MLogs and ALogs can be viewed.
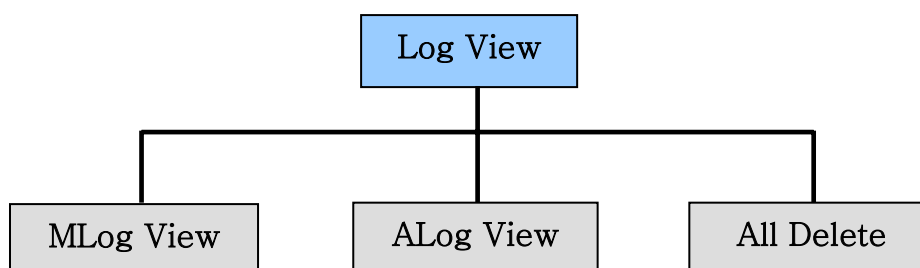
```
                    ┌─────────────┐
                    │    Info     │
                    └──────┬──────┘
       ┌───────────┬───────┴───────┬───────────┐
  ┌─────────┐ ┌─────────┐    ┌─────────┐  ┌─────────┐
  │  Users  │ │ Managers│    │  MLogs  │  │  ALogs  │
  └─────────┘ └─────────┘    └─────────┘  └─────────┘
```
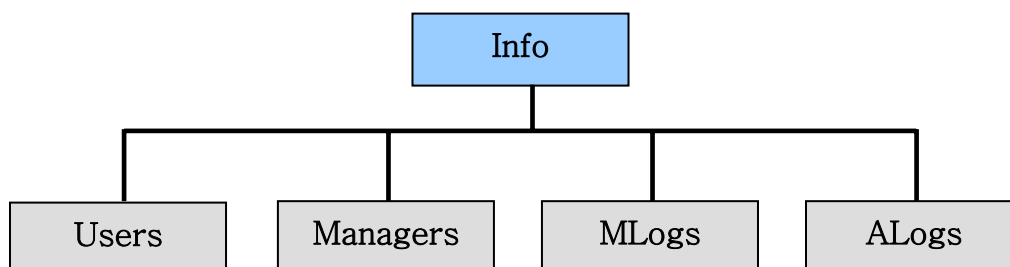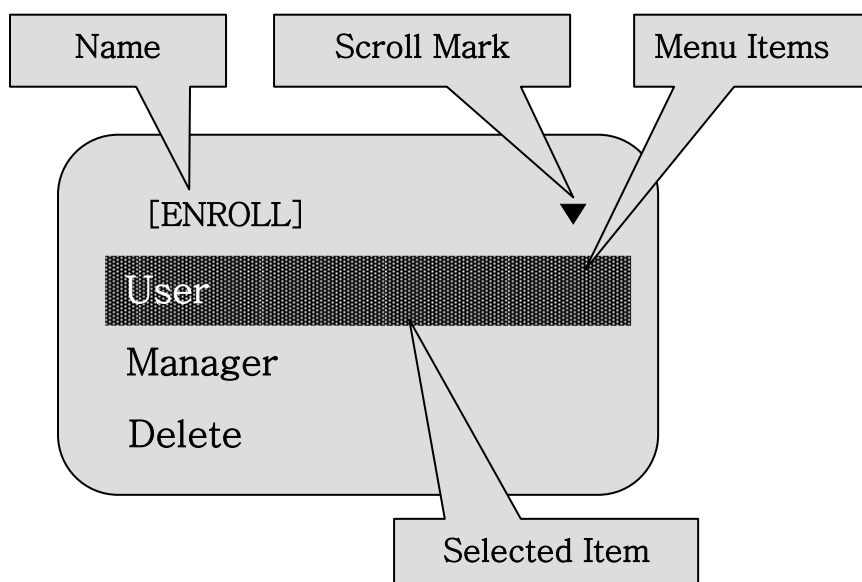
⑤   Log View

"Log View" menu item has the following items.

```
                   ┌─────────────┐
                   │  Log View   │
                   └──────┬──────┘
        ┌─────────────┬───┴────────┬────────────┐
  ┌───────────┐  ┌───────────┐  ┌───────────┐
  │ MLog View │  │ ALog View │  │ All Delete│
  └───────────┘  └───────────┘  └───────────┘
```

⑥   Menu Displaying

```
  ┌─────────┐  ┌─────────────┐   ┌─────────────┐
  │  Name   │  │ Scroll Mark │   │ Menu Items  │
  └─────────┘  └─────────────┘   └─────────────┘

       [ENROLL]                    ▼
       ┌────────────────────────────────────┐
       │ User                               │
       └────────────────────────────────────┘
         Manager

         Delete

                    ┌───────────────┐
                    │ Selected Item │
                    └───────────────┘
```

Menu displaying screen consists of name, menu item, selected item, scroll mark and so on.

➢ Name: It shows functions of the current menu items.

➢ Menu items: It indicates selectable operations.

If manager selects a certain command using "↓" or "↑" key a nd presses "OK" key, then he can enter into the lower grade menu or find himself in setting status of the item.

Manager can exit from the current menu and return to the hi gher grade menu by pressing "E" key.

In setting status manager can change setting values using "↓" or "↑" key or number keys.

There will be a warning when manager sets an invalid value.

After changing, manager can confirm changed setting value by pressing "OK" key or cancel from current menu by pressing "E" key.

The setting operation failed, there will be a warning message in　LCD or a beep sound that notice failure.

➢ Selected Item: it indicates selected menu item.

Using Up or Down key ("↓" or "↑"), manager can move the selected item displaying.

➢ Scroll mark: If scroll mark is "▼" (or "▲"), manager can scroll down (or up) using "↓"key (or "↑"key).

3)　In/Out Authentication

In this section it is described the user's identification procedure in In/Out mode. In this mode user can verify his identity by 3 manners namely fingerprint identification, password verification and card verification.

①　Fingerprint verification

In In/Out mode the first displaying screen is as follows.

```
┌──────────────────────────┐
│  Welcome! Please input   │
│                          │
│  6 / 13 / 2005           │
│                          │
│     11 : 53        20    │
│                          │
└──────────────────────────┘
```

When user places his already enrolled fingerprint on the fingerprint sensor, the following is displayed on the LCD screen.

```
┌─────────────────────────────┐
│                             │
│   [FP VERIFY]               │
│                             │
│                             │
│                             │
│                             │
│                             │
└─────────────────────────────┘
```

If fingerprint identification is successful, user's enroll ID is displayed with "Verify OK" in guide message box and returns to the main state. At the same time beep sound which means identification success is emitted and the door is opened in the period of the Unlocking time.

```
┌─────────────────────────────┐
│                             │
│   [FP VERIFY]               │
│                             │
│   ID：1                     │
│                             │
│   Verify OK!                │
│                             │
└─────────────────────────────┘
```

If fingerprint identification is failed, only beep sound which means identification fails or the user's wrong input is emitted and the following message is displayed.

```
┌─────────────────────────────┐
│                             │
│   [FP VERIFY]               │
│                             │
│                             │
│   Again Input!              │
│                             │
└─────────────────────────────┘
```

② **Password verification**

    User who has already enrolled his password executes password verification according to the following procedure.

    First press any number key in In/Out mode. Then there will be seen the screen below.

```
     [PWD VERIFY]


 ID:                 00000000
 PWD:
```

　　User inputs the enrolled number (ID), for example 235 using number keys and presses "OK" key.

```
        [PWD VERIFY]


 ID:                  00000235
 PWD:
```

　　If the ID has enrolled with password, then there will be displayed screen below.
　　If the password isn't enrolled on the inputted ID, the user must re-input the ID.

```
        [PWD VERIFY]


 ID:                 00000235
 PWD:                ＊ ＊ ＊ ＊
```

Inputs the enrolled password and then press "OK".

```
        [PWD VERIFY]


 ID:                  00000000
 PWD:
```

If the password is matched, the beep sound which means verification success is emitted and the main window is displayed.

If matching fails, the beep sound which means verification fails is emitted.

③ **Card verification**

4) Enrollment

In Management mode manager can do various management operations for example enrollment and deletion of users, log data management, system information setting and so on.

In this section it is described enrollment of user and managers, enroll data deletion and enrolled data viewing procedure.

① **Enrolling User**

If the machine is power-on, SB2000A's operation mode goes into the general operation mode (verification mode).

In this time, the LCD screen is the following.

```
┌─────────────────────────────────┐
│ ▓Welcome!  Please inp▓          │
│                                 │
│  6 /13/2005          MON        │
│                            01   │
│   11 : 53                       │
│                                 │
└─────────────────────────────────┘
```
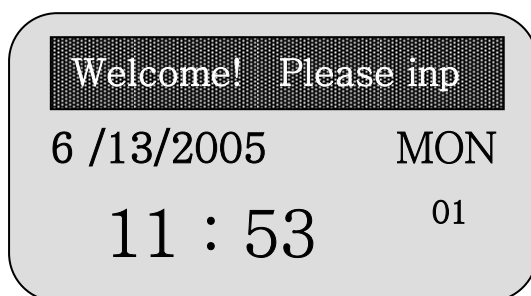
To enter into management mode from verification mode, press "Menu" key in the first displaying screen of verification mode.

If any manager is not enrolled in the access controller, then it is possible to enter directly into management mode but if manager is enrolled, it is required the manager identity verification.

In the case of the first use of this product, there is no enroll data and therefore any user can enter into management mode.

The manager identity verification procedure is as follows.

Press "Menu" key in Verification mode.

Following screen is displayed.

Manager?

Manager inputs his enrolled fingerprint, password or card.

If manager identity verification is failed, then beep sound which means failure is emitted and the following screen is displayed.

Manager?

Again Input!

If manager identity verification is successful, then
beep sound which means success is emitted and the first operation sc reen in management mode is displayed as follows.
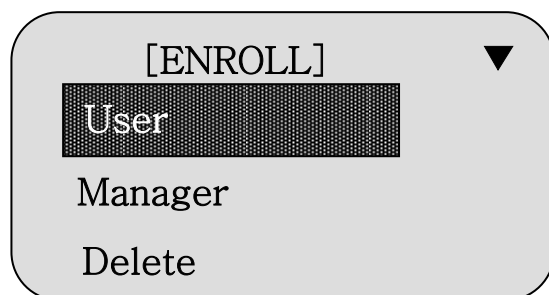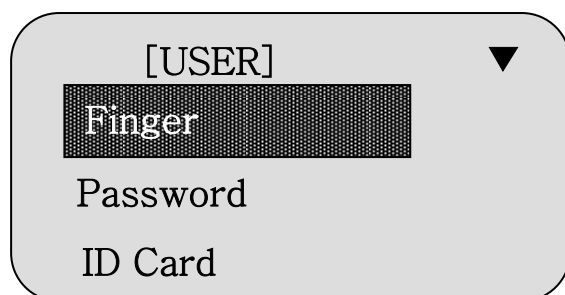
[MENU]   ▼

Enroll   Info
Setting   Log View

If manager's fingerprint verification is failed, beep sound which means failure is emitted and the message, "Input again!", is disp layed.

Then manager can re-input enrolled fingerprint until success.

After successful manager identity verification, select "Enroll"item in the first screen of manager operation status and press "OK"key.
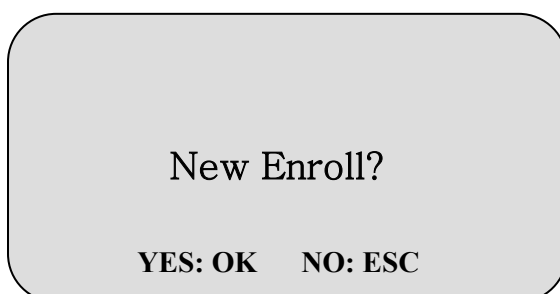
```
┌─────────────────────────────┐
│    [ENROLL]          ▼       │
│  ▓User▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓        │
│                              │
│   Manager                    │
│                              │
│   Delete                     │
└─────────────────────────────┘
```

Select "User" item and press "OK" Key.
Then there will be displayed the following screen.

```
┌─────────────────────────────┐
│    [USER]            ▼       │
│  ▓Finger▓▓▓▓▓▓▓▓▓▓▓▓          │
│                              │
│   Password                   │
│                              │
│   ID Card                    │
└─────────────────────────────┘
```

- **Fingerprint enrollment**

  Select"Finger" item and press "OK" key. Then there will be displayed the following screen.

```
┌─────────────────────────────┐
│                             │
│                             │
│       New Enroll?           │
│                             │
│    YES: OK     NO: ESC      │
└─────────────────────────────┘
```

  If manager wants to enroll a new user, press "OK" key.
  If manager wants to enroll a fingerprint on the same ID, press "E" key.
  If manager presses "OK" key to enroll a new user, the following screen will be displayed.

```
[INPUT ID]


I D:              00000002
   YES: OK      CANCEL: ESC
```

  Now the unused minium ID will be displayed.
  Manager can any ID number using up and down keys or number key.
  If manager inputs the ID number, for example 235, presses "OK" key, then working status goes into the following status to input fingerprint.

```
[FP ENROLL]

00000235-1
Place Finger #1
```

  On the screen 00000235-1 means that user's fingerprint will be enrolled the first fingerprint on the ID 235.
  User has to place a his(her) finger on the finger senser three times continuosly.
  If user place his(her) finger on the fingert sensor first, the following screen will be displayed.

```
[FP ENROLL]

 00000235-1
Take Off!
```

  After taking the finger off, the LCD screen will be dislpalyed bellow.

```
[FP ENROLL]

00000235-1
Place Finger #2
```

After placing the finger for the third time, if enroll operation is successful, it shows the following screen, emmitting the beep sounds which means enrollment success.

```
[ENROLL]


CONTINUE?

YES: OK   NO: ESC
```

Press "OK" key to continue enrlloment.
Press "E" key to exit.
If enrollment operation fails, it shows the following screen, emmitting the beep sounds which means enrollment fails.

```
[FP ENROLL]

00000235-1
Take Off!
Again Input!
```

If the fingerprint user inputs is already enrolled fingerprint, it shows the following message with the beep sound.

```
[FP ENROLL]

00000235-1

Enrolled!
```

On the screen, 00000050-1 means that the fingerprint to enroll is the first fingerprint what has been already enrolled on the ID 50.

If manager wants to enroll a fingerprint on the ID that has already 1 or 2 fingerprints, press "E" key when the following screen is displayed.

New Enroll?

YES: OK   NO: ESC

Then there will be displayed screen below.

〔SEARCH ID〕
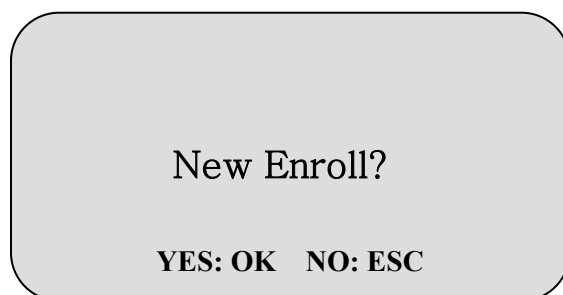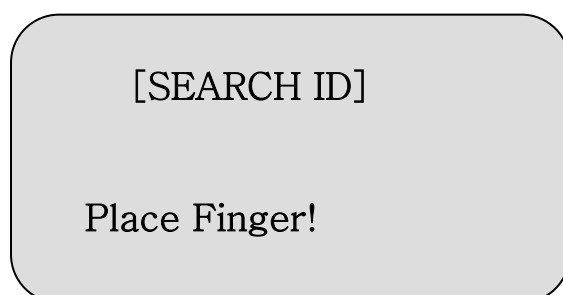
Place Finger!

If user placed his(her) fingerprint what has been already enrolled, the following screen will be displayed.

〔FP ENROLL〕

00000235-2
Place Finger   #1
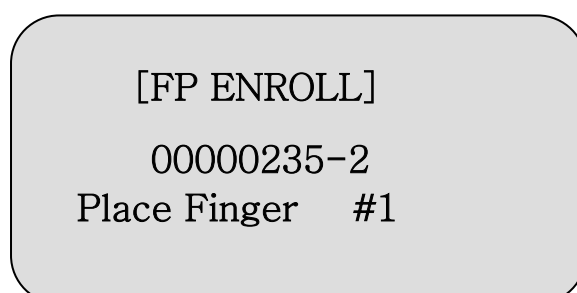
On the screen, 00000235-2 means that the placed fingerprint has been already enrolled on the ID 235 as the second fingerprint.

If there is no matched fingerprint, next procedure equals to enrolling a new user.

In the case of the new enrollment on the enrolled ID with a password, press "OK" when the message, asks the new enrollment, and input the enrolled ID with password, then next procedure equals to enrolling a new user.
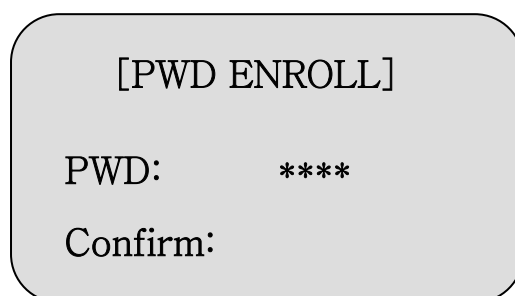
▪ **Password Enrollment**

   Select "Passowrd" menu item and press "OK" key to enroll user's password.

```
[USER]                ▼

Finger
Password
ID Card
```
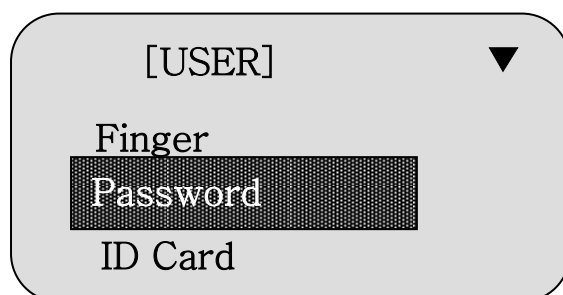
   Input the ID to enroll using up and down keys or number key in the same manner of fingerprint enrollment and press "OK" key.
   Then the following screen will be displayed.

```
[PWD ENROLL]


PWD:

Confirm:
```
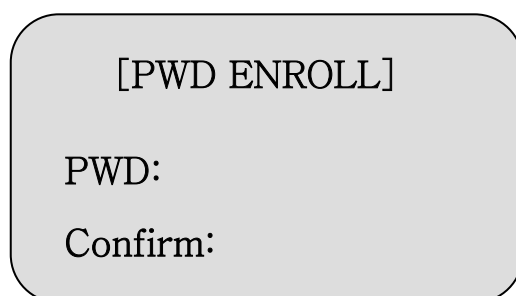
   Input the password and press "OK" key.

```
[PWD ENROLL]


PWD:          ****
Confirm:
```

   Input the same password to confirm again in the next box and press "OK" key.
   If the password to confirm is different to the original password, the beep sound is emmitted and turns back to status to input password again.
   After enrolling password, press "OK" key to continue or press "E" key to exit.

Password can be enrolled only on the ID without the enrolled password.

- **Fingerprint and password enrollment**

  In SB2000A, users can enroll fingerprint and password on the same ID at a time.
  Select "FP + PWD" item and press "OK" key to enroll fingerprint and password at a time.
  Then input the ID to enroll and press "OK" key.
  First of all user has to place his(her) fingerprint on the sensor 3 times in the same manner of fingerprint enrollment.
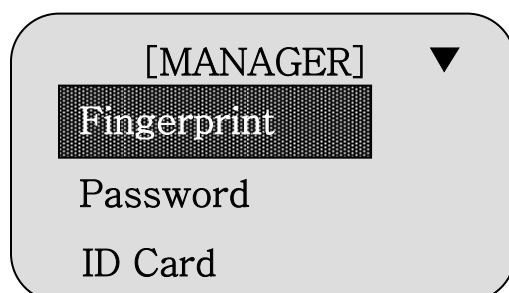 If fingerprint enrollment success, input the password in the same manner of password enrollment.
  If password enrollment success, fingerprint and password are enrolled at a time.

② **Enrolling manager**

Select "manager" item in the "enroll" menu and press "OK".
Then the following screen will be displayed.

```
┌─────────────────────────────┐
│    [MANAGER]      ▼          │
│  Fingerprint                │
│                             │
│  Password                   │
│                             │
│  ID Card                    │
└─────────────────────────────┘
```

In the manager enrollment, the enrolling fingerprint, password, ID card, fingerprint and password, fingerprint and ID card can be performed in the same way of user enrollment.
The total number of manager to can enroll is set in the system setting menu.

③ **Delete enrolled data**

Select "Delete" item to delete the enrolled data and press "OK" key.
Then the following screen will be displayed.

```
        [DELETE]
  ┌─────────────────────┐
  │ Finger              │
  └─────────────────────┘
    Password

    ID Card
```
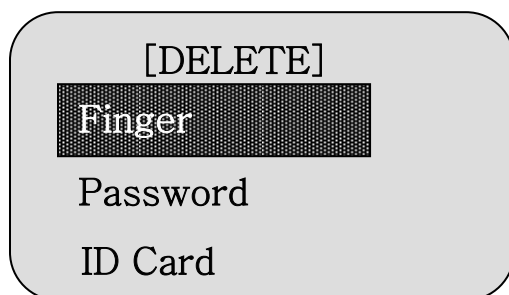
Select a menu item from among the "Finger", "Password", and "ID card" to delete and press "OK" key.
Then the following screen is displayed.

```
      [INPUT ID]


  I D :          00000002

    YES: OK     CANCEL: ESC
```
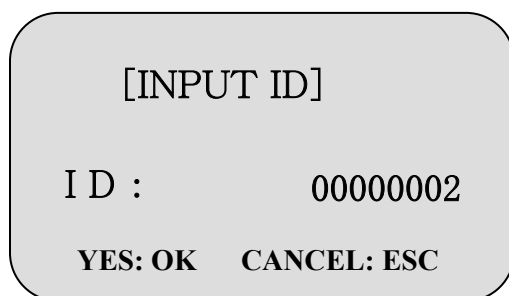
Input the ID to delete and press "OK" key.
Then it shows confirmation screen whether delete or not.

```
      [DELETE]


    Are you sure?

    YES: OK         NO: ESC
```
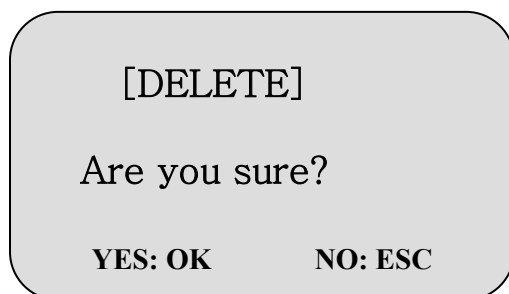
Press "OK" key to delete or press "E" key to cancel.
If deletion successes, the beep sound is emitted.

④   **Delete all of the enrolled data**

Select "All Delete" item to delete all of enrolled fingerprint, password and card data and press "OK" key.
When it shows confirmation screen, if manager presses "OK" key, then all of the data is deleted.
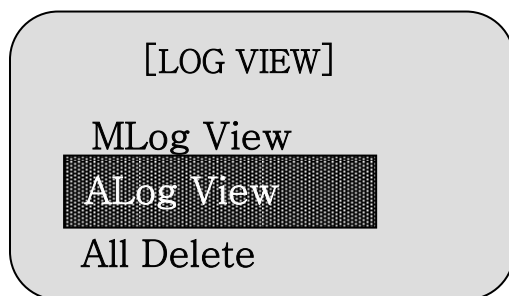
5)　Management of the log data

Manager can not only view the log data of In/Out and management, but can also delete them.
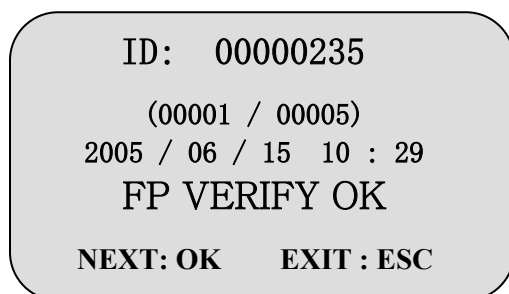
①　View the log data of In/Out

Select "Log View" item on the first management screen and press "OK" key.

Then there will be the screen below.

```
[LOG VIEW]

  MLog View
  ALog View
  All Delete
```

If manager selects "ALog View" item and presses "OK" key, it shows the input box of the ID. Input the ID, for example 235, and press "OK" key.

```
ID:   00000235

   (00001 / 00005)
 2005 / 06 / 15  10 : 29
  FP VERIFY OK

 NEXT: OK      EXIT : ESC
```

On this screen "ID : 00000235" is the user's ID and "00005" of "00001 / 00005)" is the total number of In/Out and 00001 is a number of the log data that displayed on the screen.

"2005 / 06 / 15　　10: 29" is the date and time when this user verified.

"FP VERIFY OK" means that he verified with his fingerprint.

If manager presses "OK" key or "↓", the next data will be shown.

If manager presses "↑", the previous data will be shown.

When there is no any log data, the following screen will be displayed.

```
[ALog View]


No Exist!
```

② **View the log data of the management**

If manager selects "MLog View" and presses, there will be displayed the screen below.

```
ID:   00000335

 (00001 / 00005)
2005 / 06 / 15   11 : 35
FP En       00000235
NEXT : OK     EXIT : ESC
```

Input the manager's ID, for example 335, and press "OK" key.

On this screen "ID: 00000235" is the ID of manager and "00005" in "00001 / 00005" is the total number of the log data that this manager performed before and "00001" is a number of the log data displayed on the screen.

"2005 / 06 / 15   10 : 29" is the data and time when he performed the management operation.

"FP En 00000235" means that this manager enrolled fingerprint on the user's ID 235.

If manager presses "OK" key or "↓" key, the next data will be shown.

If manager presses "↑", the previous data will be shown.

If there is no any log data of management operation, there will be displayed the following screen.

```
[MLog View]


No Exist!
```

③   **Delete all of the log data**

Select "All Delete" key to delete all of the current log data and press "OK" key.

```
        Delete All Data


        Are you sure?

    YES: OK        NO: ESC
```

If manager presses "OK" key, all log data of In/Out and management will be deleted.

6)   **Setting system information and Investigation**

Manager can set value of the various information related with In/Out. He can also investigate the various information saved in system.

①   **System setting**

Select "SystemSet" on the first screen and press "OK".
Then the following screen will be displayed.

```
    [Setting]         ▼
  MachineID        001

  Language         ENG
  NumOfMng          03
```

Select an item to set using up and down keys and then press "OK" key. For example, if manager presses "Language" key, there will be setting screen below.

```
    [Setting]         ▼

  MachineID        001
  Language         ENG
  MngCount          03
```

"Language" item's value can be changed by pressing up or down key.

If manager changes the value and presses "OK" key, it will be changed into the current set value.

Manager can set the following items.

- Machine ID

Contents	Description
1 ~ 255	Unique number of the machine for distinction in network.
Default value	1

- Language

Contents	Description
Korean	All caption, message and information will be shown in Korean.
Chinese(Simplified)	All caption, message and information will be shown in Chinese (Simplified).
Chinese(Traditional)	All caption, message and information will be shown in Chinese(Traditional)
English	All caption, message and information will be shown in English
Japanese	All caption, message and information will be shown in Japanese.
Default value	English

- NumOfMng

Contents	Description
1 ~ 10	The range of total manager can be set
Default value	9

- Auto Off

Contents	Description
1 ~ 255(minute)	Once auto off time is set, it will be auto off after the setting period without any

	operations.
Default value	60(minute)

- Time Set

Contents	Description
YY:MM:DD hh:mm:ss	System time of the machine
Default value	The current time

- MLog WRN

Contents	Description
1 ~ 999	If the number of management log data exceeds this setting value, the warning message will be shown. If the number of management logs data exceeds 1000, it will overwrite.
Default value	990

- ALog WRN

Contest	Description
1 ~ 19999	If the number of management log data exceeds this setting value, the warning message will be shown.
Default value	19900

- Unlock

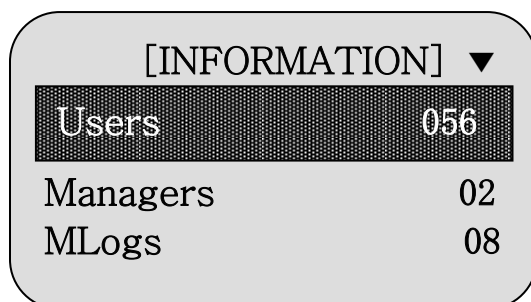| Contest	Description
1 ~ 255	The door is opened in the period of this time.

Default value	5(seconds)

② **Info**

Manager investigates the number of enrolled users and managers, MLog and ALog in system.

Select "Info" item on the first screen and press "OK" key.

Then there will be shown the screen below.

```
┌─────────────────────────┐
│   [INFORMATION]  ▼      │
│ ┌─────────────────────┐ │
│ │ Users         056   │ │
│ └─────────────────────┘ │
│   Managers      02      │
│   MLogs         08      │
│                         │
└─────────────────────────┘
```

Manager can perform the investigation using up and down keys.